

TELCON Distributed Communication Processor



The SPERRY UNIVAC TELCON system provides basic hardware, software and peripherals for the large communication user, as well as those that require less density in terminal, line, and network control functions.

This system is configured with a basic building block architecture and thus, can operate as a front end processor for the SPERRY UNIVAC 1100 Host Processors, a network nodal processor, and a remote concentrator. As such it provides communication networks capable of simultaneously supporting transaction, time-sharing, remote job entry and message switching applications.

The Distributed Communication Processor may consist of: processor, remote input/output controller, diskette, cartridge disk, magnetic tape, Scanner I or II communication controllers, and the remote control module. The memory of the Distributed Communication Processor is expanded in 16K byte increments up to 128K bytes, provides a word length of 16 bits plus parity, direct memory accessing, with a read time of 920 nanoseconds and a write time of 860 nanoseconds.

The various hardware components are tailored to meet the user telecommunication needs.

Software control is executed under a base, which is a powerful, efficient and compact element of the total operating system. A wide choice of communications software elements is provided under the operating system which enables efficient data flow within all segments of the communication environment. The major elements of communication control reside within the network control software modules which provide a distributive software function.

The network control software resides in all network nodes and provides routing and processing functions within the network.

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Some of the modules included within this network control software are: network manager interface, inter-network control communications, accounting, error control, on-line diagnostics, status monitoring, command processing, system synchronization and others.

This Distributed Communications Processor with the TELCON system, following the guidelines of the SPERRY UNIVAC Distributed Communications Architecture, will provide communication networking control that will meet the needs of a majority of contemporary data communication users.

If your needs include data processing within a telecommunication environment the SPERRY UNIVAC TELCON system will probably meet those needs. Contact your local Sperry Univac office for further details.

Control through the SPERRY UNIVAC TELCON system

Sperry Univac—means total communication from modems to processors from terminal multiplexers to Distributed Communications Processor. If your data communication support requirements are spread across the land, from factory to factory or campus to campus or office to office the SPERRY UNIVAC TELCON system will do your data communication job with the economy and speed required in today's communication and data processing market.

The goal of the SPERRY UNIVAC TELCON system is to satisfy data communication needs with fidelity and control, while enabling the host processor to perform its day to day batch processing requirements.

One of the major components in the SPERRY UNIVAC TELCON

system is the Distributed Communications Processor. This product will provide network control, a wide range of data transmission rates, multiple terminal type support, line cost savings, modularity with system growth capabilities and the ability to tailor communication networks to fit your data processing and data transmission needs.

This processor is a general purpose, 16-bit computer with 8-bit byte addressability. The basic hardware elements of the processor include a storage interface, 32 general registers, two status registers, a program address register, a manual-entry breakpoint register, a real-time clock register, an interrupt clock register, a read-only memory, an arithmetic section and a function control section. Internal data transfers are communicated by means of a single parallel bus which connects all logical units and the general register.

FUNCTIONAL CHARACTERISTICS

Memory capacity
32K bytes to 131K bytes in 16K-byte increments

Memory type
Integrated Circuit (IC)

Word length
16 bits plus 2 parity bits (one per byte)

Memory cycle time
Read 920 nanoseconds, write 860 nanoseconds

Direct memory-accessing and full memory-addressing capability

Instruction repertoires
40 basic instructions in 4 formats, with modifiers, up to 200 unique instructions

Contact your Sperry Univac representative for additional information, including prices, delivery data and further specifications.

Non-destructive read-only bootstrap loader

Communication termination
128 full-duplex lines; 256 half-duplex lines; 45K bps to 56K bps, automatic answering; automatic dialing

Interfaces
EIA RS 232C/CCITT V.24/V.35, MIL 188 B/C

PHYSICAL CHARACTERISTICS

Width: 62" (157.5 cm)
Height: 44" (111.8 cm)
Depth: 33" (83.8 cm)
Weight: 400 to 650 lbs.
(181 to 294 Kg)

POWER REQUIREMENTS

Nominal voltage: 120 volts

Nominal frequency:
60 Hz and 50 Hz

Phases
Single phase

Nominal load
1200 watts minimum, 3600 watts maximum

ENVIRONMENTAL CHARACTERISTICS

Nominal working range
Temperature: 40°F to 105°F
4°C to 41°C
Humidity: 5% to 95%

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The intelligent answer in distributed communication networking—processing—and control.

The SPERRY UNIVAC TELCON system is a software/hardware product that not only meets the diversity of user networking needs today, but also provides a modular architecture such that the long term user investment is secured. This product emphasizes a constantly improving technology, a development expansion potential and freedom from constraint on growth and utilization.

This product was designed and configured to comply primarily with the SPERRY UNIVAC Distributed Communication Architecture and as such provides price/performance, technological superiority and an ease of migration that is significant in today's telecommunication marketplace.

Remote Control Module (RCM)

The Remote Control Module (RCM) is a hardware component of the TELCON system which provides a means for sequencing and configuring various elements of Distributed Communication Processor and associated peripherals.

This device provides various functions that are needed for processor and peripheral controls in unattended environments or where local host control of the DCP reconfiguration is desired.

The RCM can be controlled remotely by a computer, DCT 500 or an ASCII code teletypewriter and will perform the following functions:

- Power up or down single or dual—Distributed Communication Processors.
- Perform the 'stop' or 'run' functions for single or dual DCP'S
- Master clear single or dual DCP'S
- Set or reset the manual jump enable latch functions for single or dual DCP'S

Remote Control Module (RCM)

- The RCM is housed in its own cabinet with its own power supply
- Controlled on switched or non-switched lines
- Line speeds of 110, 150, 200 or 300 bps asynchronous

- Provides 18 output control ports which control various functions of the Distributed Communication Processor
- Provides internal asynchronous modem
- Provides automatic answer and disconnect capability
- Provides character 'echo' function
- Can be remotely controlled by the host or an ASCII teleprinter, such as the SPERRY UNIVAC DCT 500.
- Modem interface includes EIA/RS232-C, CCITT V24/28 and is compatible with such modems as the Bell Telephone 103A, 103F class
- Operates in a standard office environment

Remote Input/Output Controller (RIOC)

The Remote Input/Output Controller (RIOC) provides parallel channels for communications between the memory of the Distributed Communication Processor (DCP) and other equipment such as host systems and peripheral devices.

This RIOC will provide the channel interface for attaching the DCP to the SPERRY UNIVAC 1100 systems as a front end processor. The RIOC is physically located within the DCP cabinet.

Remote Input/Output Controller (RIOC)

- Provides 16 parallel interface channels
- Provides the transfer of data to and from the DCP memory without processor intervention
- Communications between peripheral devices or host processor can be performed in 8-bit mode, 16-bit mode, or 32-bit mode
- All channels are implemented in groups of four

The RIOC is physically installed in the Distributed Communication Processor (DCP) and obtains operating power from the DCP.

UNISERVO 10 Magnetic Tape Subsystem

The UNISERVO 10 Tape Subsystem is the magnetic tape peripheral for the Distributed Communications Processor. This tape subsystem offers user convenience, technological innovation, reliability and economy that is required in the multiple application tasks of the DCP within the TELCON system. The UNISERVO 10 provides phase encoded recording (PE) and non-return to zero (NRZI). This unit operates at 25 IPS for transfer rate of 40 KB per second PE and 20 KB per second 9-track NRZI.

The subsystem configuration for the UNISERVO 10 is two tape drives. These drives are located in one cabinet which also contains the basic control logic.

This tape unit provides operator convenience features which allow fast and efficient tape handling. Automatic load and wrap around cartridge compatibility are standard.

UNISERVO 10 Magnetic Subsystem

FUNCTIONAL CHARACTERISTICS

Operating functions

reads or writes 9-track tapes
reads in forward or backward direction
writes in forward direction
read after write check capability

Recording modes

phase encoding (PE)
non-return to zero (NRZI)

Recording densities

1600 bits per inch (PE)
800 bits per inch (NRZI)

Tape speed

25 inches per second

Transfer rate (PE/NRZI 9-track)

40/20 KB per second

Rewind speed (maximum)

200 inches per second

Interblock gap

0.60 inches PE
0.60 inches NRZI 9-track

Tape media

0.5 inch wide up to 2400 foot
length of tape on compatible
tape reels up to 10.5 inches in
diameter

PHYSICAL CHARACTERISTICS

Width: 46" (116.8 cm)
Height: 64" (162.6 cm)
Depth: 34" (86.4 cm)
Weight: 952 lbs. (432 Kg)

POWER REQUIREMENTS

Nominal voltage 208 V

Nominal frequency

60 Hz and 50 Hz

Cartridge Disk Subsystem

The SPERRY UNIVAC cartridge disk subsystem is provided as mass storage peripheral on the Distributed Communications Processor (DCP) to enable high capacity disk storage for network data base storage. It provides other storage functions

associated with distributed communications and distributed processing applications. This mass storage media offers a price/performance that meets those needs of data communication users of today and provides the growth and migration path for future requirements.

This cartridge disk provides: a 10 MB capacity (5 MB fixed and 5 MB removable). Recording is on four surfaces in each unit. Two on the fixed disk and two on the removable disk. This disk rotates at 2400 rpm, has an average latency time of 12.5 MS. Average arm movement is 50 MS and transfer rate is 267 KB/second.

Cartridge Disk Subsystem

FUNCTIONAL CHARACTERISTICS

Capacity/unit (nominal)

megabytes
5 fixed
5 removable
2 units/subsystem

Speed (rpm) 2400

Rotational latency in milliseconds

Average: 12.5
Maximum: 25.0

Arm movement in milliseconds

Minimum: 10
Maximum: 90
Average: 50

Transfer rate

(kilobytes/seconds): 267

Sector size (bytes): 256

Record size (bytes): 256-1024

Sectors/track: 24

Tracks/inch: 200

Access time

(average milliseconds): 50

Diskette Subsystem

The SPERRY UNIVAC diskette subsystem is a random access, mass storage device that is provided on the Distributed Communication Processor (DCP) for loading such things as the operating system and diagnostic programs. It is also used for statistics logging on network operation, error logging, and a recording media for receiving various down-line load functions. In various applications where there is not a cartridge disk available on the Distributed Communication Processor (DCP) the diskette will retain various network control tables.

Diskette Subsystem

- The diskette subsystem in its basic configuration contains one diskette drive and is capable of being expanded to contain two diskette drives within the same housing.

The data below is relative to one drive:

Storage available

256 kilobytes

Number of tracks

77 data tracks

Track format

26 sectors at 128 bytes/sector

Access time

Track to track—seek time
10 milliseconds

Head load and seek time can overlap

Setting time: 10 milliseconds
Head load time: 50 milliseconds

Average latency

83 milliseconds

Diskette rotational speed

360 rpm $\pm 2\%$

Transfer rate

31.25 kilobytes/second

PHYSICAL CHARACTERISTICS

Width: 16" (40.6 cm)
Height: 13" (33.0 cm)
Depth: 16" (40.6 cm)
Weight: 20 to 35 lbs.
(9 to 16 Kg)

Depending on number of drives configured

Scanner I

The Scanner I is a communication multiplexer that provides communication line termination and multiplexing for the SPERRY UNIVAC Distributed Communication Processor. This device with the Scanner I expansion provides up to 32 communication line termination ports either full-duplex or half-duplex and is physically located within the same cabinet as the processor.

When the remote input output controller is installed within the DCP the Scanner I has a maximum communication line termination of up to 16 line ports either full or half-duplex. When line termination requirements exceed 16 or 32 (depending on the use of the RIOC) Scanner II's up to 256 half-duplex ports or 128 full-duplex ports are available.

Scanner I

Line adapters on the Scanner I and Scanner I expansion each service two full-duplex or two half-duplex communication lines.

Line adapters support include:

- Dual asynchronous
- Dual synchronous
- Dual dial adapters
- Dual wideband U.S.
- Dual V35
- Dual RS232 bit-oriented
- Dual V35 bit-oriented
- Dual TWX
- Dual US Telex

Scanner II

The Scanner II is a communication multiplexer that provides communication line termination and multiplexing for the SPERRY UNIVAC Distributed Communication Processor.

The Scanner II provides up to 128 half-duplex or 64 full-duplex communication line termination ports and is physically located within its own cabinetry, with its own power supply.

Up to two Scanner II's can be attached to the DCP giving up to 256 half-duplex or 128 full-duplex communication line support for each DCP.

Scanner II

Line adapters on the Scanner II each service a half-duplex or one full-duplex line.

Line adapters support include:

- Asynchronous RS232
- Asynchronous MIL 188
- Asynchronous relay
- Synchronous RS232
- Synchronous MIL 188
- TWX
- U.S. wideband
- US Telex
- Bit oriented
- V35 wideband
- Dial adapters

TELCON SYSTEM



